THE MARINE RECORD.

DEVOTED TO COMMERCE, ENGINEERING AND SCIENCE.

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AROUND THE LAKES.

CLEVELAND.

The Wetmore is being recalked all over, inside and out.

Captain A. E. White, has been appointed master of the fine steamer Aurora.

It is said that some of the Republic boats will run to Gladstone, Mich., next season for ore.

Mr. J. F. Card has purchased the stock of Messrs. H. D. Coffinberry and Robert Wallace in the Cleveland Drydock Co.

Mr. Murphy, of Marquette, was in the city this week. He states that the dock facilities at that port will be increased next season.

At the meeting of the Cleveland Vessel Owners' Association to-day much work of importance was done. A full report will be found on another page.

The schooner Colonel Cook, in tow of the tug S. S. Stone, arrived yesterday, the last arrival at this port for the season. Both crafts were badly iced over.

Captain M. M. Drake, who is looking closely after the two steel steamers, building at the Cleveland Shipbuilding Co.'s yard, returned to the city Tuesday from Buffalo.

Captain Brown, whose generalship saved the crew of the schooner Hutchinson by backing his small boat into Buffalo when his schooner went to pieces this fall, was in the city yesterday.

The transfer of the schooners Reindeer and Kate Winslow has been made, the Reindeer at the rate of $7,000 and the Winslow at the rate of $18,000. Captain Somerville transferred his interest in the Reindeer to Captain Chambers and Chambers his interest in the Winslow to Somerville.

Meteorological summary for the week ending December 28:

Mean barometer	29.91
Mean temperature	23.6
Mean humidity	78.8
Total precipitation	22.00
Prevailing direction of wind	S. W.
Total wind movement	1624
Av. cloudiness	9 4
Av. state of weather	Cloudy.
Max. temperature, highest	40 0
Min temperature, lowest	4.7

W. H. HAMMON, Sergt. Signal Corps, U. S. A.

We find in the *Celestial Empire*, an American paper printed at Shanghai, China, that Mr. A. D. Brown, a son of Captain John Brown, long on the Main street bridge, and in the old times master of various steamboats of the Northern Transportation line, has been elected senior warden of the Ancient Landmark Lodge F. and A. M. Mr. A. D. Brown was recently married to a beautiful and accomplished American lady in Shanghai, and he is doing good work in christianizing the heathen Chinee.

The lights at this harbor were discontinued to-day. The main light and the east pier light were discontinued on the morning of the 16th, but the light on the west pier and the breakwater light have been continued until this morning to accommodate the vessels plying between this port and Kelley's Island. The west pier light will be exhibited if necessary during the winter.

So much ice has collected on the east breakwater that it is feared the work can not go on, but as soon as it is dissipated the work will be continued.

Mr. W. B. Lindsay, superintendent of a branch of the Chicago & Northwestern railroad, which carries the ore to Escanaba, was in the city this week. The company is building new docks and will have facilities for greatly increased business next year. The new dock will have 250 pockets, capable of containing 30,000 tons. This will give the company four ore docks of 80,000 tons capacity. The same company, in connection with their ore docks, have lumber docks 1600 feet long, from which 2,200,000 feet of lumber was shipped this last season. The facilities for handling coal will also be improved next season.

CHICAGO.

Special to the Marine Record.

The steamship Lehigh, of the Anchor line, was towed by the tugs Morford and Satisfaction to the Iowa elevator to load 60,000 bushels of corn.

The schooner Lottie Wolf has been chartered and is loading corn for Georgian Bay at 3½ cents per bushel.

J. S. Dunham's schooner Pensaukee will receive new plank sheer, stanchions, bulwarks and rail, several new strakes of plank on her topsides, and a new stern.

The schooner Minnie Slauson, Captain Harry Moore, is receiving new deck frames and deck, and will be converted into a three-and-after.

The schooner Julia B. Merrill is getting new deck frames and deck the latter to be raised 16 inches, and new topside planking.

The schooner I. M. Forrest is getting new knight heads, stanchions, rail, deck beams, and deck forward.

Captain T. D. Campbell arrived here from Manitowoc Tuesday, on his way home to visit his family in Whitehall. He says the new steambarge he is having built by Burger & Burger, is all up in frame and will be completed in April next.

The tug J. H. Hackley is doing the work at the water works crib at $700 per month.

Carpenters are working on the V. O. T. Co.'s tug Union, giving her considerable repairs.

Caplain Mohlman, of the schooner Lake Forest, has returned from Milwaukee where he had the schooner's cargo of hard wood lumber taken off, placed on the cars and sent to Philadelphia. Captain Mohlman took on the hard wood lumber with the intention of taking it to Erie in November last, but after several attempts to get down Lake Michigan he was driven back to Milwaukee by stress of weather.

At Miller Bros.' ship yard the steamship Bulgaria is in dock for bottom calking and some refastening; the propeller W. J. Averill for bottom calking; tug Robbie Dunham was at the derrick to receive a new boiler; the tug Alert for repairs.

Miller Bros.' in accordance with their usual custom, made all their employes a present of a fine turkey for their Xmas dinner.

The fine fire boat Chicago, which, before her extensive rebuild recently made at Miller Brothers' shipyard, was known as the W. H. Alley, has gone into commission again. C. F. Glines, of Chicago, has built and set up on board her, two sets of double pumps, each with six inch plungers and twelve inch stroke. The style and finish of the machinery is similar to the engines placed on the fire boat Geyser, last year. The contract stipulated that each set of pumps should throw two streams through three and a half inch hose with two inch nozzles a distance of 250 feet. On the day of their trial they threw a distance of 275 feet with 70 lbs steam pressure and 90 lbs water pressure, a trial was then made with both sets of pumps working together through four, three and a half inch leads and two inch nozzles, and with 68 lbs water pressure threw the stream 260 feet. A heavy rain storm coming on prevented further trial being made until a more favorable day. The working of the machinery and steadiness of the streams were pronounced by Mayor Roche and Chief Swenie, as unequalled and the boat was put in service at once. By the addition of this boat to the Chicago fire department, it makes our river protection second to none in the world.

Captain Oliver Swanson, who has been getting the schooner Ellen Williams torn out ready for a rebuild at Fort Howard, came home to Chicago, to spend Christmas holidays. He will return to Fort Howard, soon after the rebuild of his schooner which will be done by Johnson Bros., ship builders, at Fort Howard.

The list of repairs for damages done to the schooner Ellen Williams, by collision on Lake Michigan, July 7th last, with the steambarge Erin, of St. Catharines, has been paid for by the owners of the Erin.

Captain Joseph Schucknecht, formerly captain of the tugs Shelby and Taylor, is thought by many of his friends to have become of u sound mind. Last Friday he was arrested for stealing some butter on South Water street and he is now held in the insane department at the county jail. Efforts are being made here, by persons who wish to befriend him to have him sent to the marine insane department at Washington, D. C.

We are informed that the Union steamboat company, of Buffalo, are endeavoring, by means of a petition which they have placed in the hands of T. T. Morford, their agent at Chicago to obtain signatures, to prevent the building of a double track iron bridge over Chicago river, at Washington street. The company's grievance is that they would have to part with a portion of their dock and buildings adjoining Washington street to make room for the bridge and its apparatus. By the building of more bridges with all modern improvements and the best machinery that can be obtained for opening and closing them traffic would be largely facilitated and there would be no just reason why navigation up and down Chicago river, should be impeded so much as it is now, and the so called bridge nuisance would soon become a thing of the past.

The Chicago Tribune of Saturday last says: The Chicago river electric light plant is now completed, and the 100 brilliant lights will blaze out on the Chicago river to-night. It will be a novel thing to see the Chicago river so light that the tugboats can pass and repass without the necessity of keeping up constant whistling. The Chicago river plant will be operated by a 125-horse power engine, a "Buckeye" of the latest improved pattern. There are four dynamos of the western electric light company's manufacture, with a capacity of 125 lights. There are about ten miles of insulated cable laid inside of the docks and in the river, running to viaducts and bridges. These cover all the bridges from Polk on the South to Indiana on the North Branch, and the mouth of the river. There are four of these lights on every bridge, two at every street end, and the viaducts are all lighted, every lamp being of 2,000 candle power. These will actually displace over 400 gas lamps, and will be run at cost far below that paid for gas. The machinery of the plant is located in the basement of the chemical engine house No. 1, at the corner of Washington and Clinton streets. The boiler has five times the capacity required. These lights will give 200,000 candle power, or more than 10,000 gas lamps.

James Corrigan, of Cleveland, James Davidson, of West Bay City, and Messrs. W. W. Bates and ——Parsons, of Buffalo, were in this city Monday. WILLIAMS.

MT. CLEMENS.

Special to the Marine Record.

Following are the dimensions of the new barge building here for the Tonawanda barge line: Length of keel 187 feet, beam 32 feet, depth of hold 12 feet, over all 210 feet. She is very strongly built, all of good oak timber, and is intended for the lumber trade between Manistique and Tonawanda. She was launched on December 29, from Captain Wm. Dulac's shipyard.

The list below comprise the vessels laid up at this port: Steambarges City of Mt. Clemens, J. S. Rudy, Sakie Shepherd, Atlantis, Ida, passenger propeller Nellie, tow barges Fulton, Elvina, scows Sassacus of Cleveland, and the Eugene Vesta.

The Eugene Vesta was purchased by Captain Dulac in November for $1,300.

The barge City of Mt. Clemens had a very successful season, making in 7 months and 11 days, forty-eight round trips with lumber from Oscoda to Detroit, carrying 7,000,000 feet of lumber besides 1,700 tons of freight. L.

CLAYTON.

Special to the Marine Record.

Engineers Warren Tilton and Will C. Gould, of the Sheffield and Ohio, are home spending the holidays with their parents.

S. S. Percy, mate of the John Burt, has returned home for the winter and has just arrived from Canada, with a trotter; one which will make it warm for the boys on the ice this winter.

The Juniata will be rebuilt this winter; her sides carried out from water lines up, and new cabins. C. M. M.

MANISTEE.

Special to the Marine Record.

List of vessels laid up at Manistee, Mich.: Steambarges Nellie Torrent, Ida C, Maggie Marshall, schooners City of Toledo, Melitta, A. W. Luckey, Isabella Sands, Arundel, Agnes L. Potter, John Mark, tugs C. Williams, Irma L. Wheeler, Frank Canfield, J. C. Osgood, Wm. R. Crowell, Annie L. Smith, J. E. Rumbell, Jr., Fannie Parnell, L. S. Payne.

Ramus Thoresen, shipbuilder, is doing considerable work at his shipyard. He is building a floating drydock and is giving the schooner Annie L. Smith new upper works and recalking. He will rebuild the schooners John Mark and Isabella Sands during the winter. JOHN.

SANDUSKY.

Special to the Marine Record.

From three to five inches of ice now covers our bay, but there is no ice to speak of in the lake.

The steamer "American Eagle" is still making daily trips between this place and the Islands.

The tug Cushing left here to-day with the Brig David Ferguson. The barge is under charter to carry a load of lime stone from Marblehead to Cleveland, consigned to Calkins & Co.

Steambarge Farnan and barge Col. Cook also loaded stone at Marblehead for the Cleveland breakwater.

The list of vessels in winter quarters here is not as large as usual, as will be seen by the following:

Schooners P. R. Locke, A. J. Rogers, Richards, barges Icsman, Wend-the-wave, Pacific, steammers Ferris, R. B. Hays, Schnoor, Telegram, Norma, Bessie, Dessault, City of Dresden, Louise, tugs Dan Connelly, Bennett, Jno. E. Monk, Annie Robertson, Buffalo, Myrtle, Cal Davis, dredges Constitution, Black Rock and one belonging to the Cleveland Hydraulic Dredging Co.

The City of Dresden is undergoing extensive repairs on Capt. Monks ways.

The steambarge Norma is soon to receive a new wheel. She lost three buckets of her old one while on the rocks at Pelee Island, Dec. 9th., but was easily pulled off by the tug Myrtle and no other damages done.

P. S. Horton Esq., contractor of Clevelands new breakwater and J. C. Gilchrist Esq., of Vermillion, were in the city to-day.

Fred Groch offers his tug Myrtle for sale and asks $4,500 for her. She will make a good bargain for the right man.

The steamer Jay Cook of this city, is receiving a thorough overhauling in Detroit, and will be on her old route in the spring in a first class condition. C. S.

FRANKFORT.

Special to the Marine Record.

The ferry tug Cynthia was launched this week and again entered in commission, plying as ferry between north and south Frankfort.

Our harbor that was frozen over is again clear of ice. Weather for the past week very mild.

Tug John Cowan, Captain Ben Martin, is still engaged in fishing and will continue until the "freeze up."

Propellers J. D. Dewar and Geo. D. Sanford are making daily trips to Manistee, weather permitting.

Propeller Dewar made a trip to Aral pier, twenty miles north of Frankfott, on December 18, with supplies.

Point Betsy light was shut down December 17.

During the gale and snow storm Wednesday afternoon, December 21st, a schooner attempted to make Frankfort harbor. She got in the mouth of the pier, and lowered her foresail when the wind blew her out again. She made canvas and stood to the north, and was soon lost sight of in the snow storm that prevailed. She is probably at Manistee islands.

Frankfort harbor light is still kept burning. BURMEISTER.

QUALIFICATIONS OF ENGINEERS.

DETROIT, December 26.

To the Editor of the Marine Record:

In our last letter we sent you a copy of the laws governing the qualification of engineers on steamers in the merchant marine of Ontario, British Columbia, and other territories. We were asked by an engineer who had read the copy of the laws, published in the MARINE RECORD, who wanted to know where the engineers would be found in the United States who could qualify under this law; he thought there were probably a few who might be able. We replied that we believed there were as good engineers in the United States as there were in any other country in the world; but they had to bear the reproach that was cast upon them by the granting of certificates to unworthy men, who knew nothing of the steam engine, or of what were his duties in properly taking care of it. We also said we were aware that the American engineer was sneered at by the English engineer, for they say no English engineer is granted a certificate unless he first serves three years in the engine room on the watch, and has served a regular apprenticeship in a steam engine shop. He has also to pass a rigid examination before a board of engineers. This board is recommended by the board of underwriters to the minister of marine, who, if he finds that the qualification is satisfactory, appoints them. You see that the board of underwriters think that they should have something to say of the qualification of engineers. If he has not had experience they believe that the steamer they insure may be lost by his incompetency. The engineer must present his certificate to the regularly authorized agent of the board, and if he finds all things satisfactory he then stamps the certificate. This has to be repeated yearly.

You will see that the board of underwriters keep a strict watch over the men employed on steamers that they have risks on. If this same vigilance was maintained by the American boards of underwriters there would be fewer losses to pay. Is not the engineer the one whom the captain consults when the steamer is in danger? And you will find that by his skill the vessel is saved, while he receives no credit.

ENGINEER.

OBITUARY.

The death of Captain Charles Davis, one of the oldest lake captains, says the Oswego Times, occurred at his residence, East Fifth, south of Albany, Thursday. Captain Davis was about 65 years of age, and has been a central figure in marine circles for many years. He came to this city about 1848 or 1849, and commenced sailing for Penfield, Lyon & Co. After a time he went into the employment of Doolittle, Irwin & Wright, and sailed the schooner Rowan for them. After a season or two he went into the mill and remained there until 1857, when he purchased an interest in the schooner Belle Sheridan and took command of her. Subsequently he became sole owner and continued to sail the schooner until four or five years ago when, by reason of ill health, he was compelled to retire. Since February last he has been confined to the house and his death was not expected. Captain Davis was twice married and leaves a family of five daughters. He was a man highly esteemed by his associates, who will learn with deep regret that he has passed away. Captain Davis was a member of Oswego lodge No 127, F. and A. M., and his funeral was conducted under the auspices of that lodge with masonic ceremonies.

The propeller Tacoma arrived at Buffalo Thursday evening of last week, and the Alverson Friday morning at 7 o'clock. At 9 o'clock the propeller Tioga, Captain Robinson, and propeller Jewett, Captain Byrnes, steamed into port, thereby completing their twenty-five round trips between Buffalo and Chicago. The best record heretofore was by the propeller New York; which completed twenty-one and one-half last season; so it is no wonder that the Tioga and Jewett came in with colors flying. They left together April 29th and came in together on the last trip. They have traveled 46,800 miles and carried 85,000 tons of freight each.—Buffalo Express.

MARITIME LAW.

WAGES—CANAL BOAT MAN—HIRED ON CLAIMANTS CANAL BOAT—LIBELING CLAIMANTS STEAMBOAT—STEAMBOAT NOT SUBJECT FOR SERVICES RENDERED ON CANAL BOAT.

U. S. District Court, Eastern District of New York.

Where libelant was hired to work on claimants canal boats Ida Meyer, which was used to tow the canal boats through the Erie canal, but that the libelant did not engage to work on the steam canal boat, it was held, that there was not such a relation between the canal boats and the steamboat as to make the canal boats a part of the steamboat, so as to charge the steamboat with a lien for labor performed on the canal boats. The libel was therefore dismissed.

Benedict J.

This is an action to enforce a lien for wages against the steam canal boat Ida Meyer.

The evidence shows that the claimant owned the steam canal boat Ida Meyer and also two canal boats. The canal boats were employed by the claimant in the freight business, and when on the Erie canal they were towed by the steamboat instead of being towed by horses. The libelant was employed to work for the claimant as a hand on the canal boats. When the engagement was made no reference was made to the Ida Meyer, nor did the libelant engage to perform any duty on board the Ida Meyer. The substantial parts of the service sued for were performed on board the canal boats, although there is evidence that the libelant did for a short time steer the steamboat. The services performed on board the steamboat were however too insignificant to demand notice here. The decision of the case depends on the question whether the relation between the canal boats and the steamboat was such as to make the canal boats a part of the steamboat, so as to charge the steamboat with a lien for labor performed on the canal boats. This position the libelant is forced to take because of the provision in section 4251 of the Revised Statutes, where it is enacted that "no canal boat registered or licensed, which is required to be registered and licensed, or enrolled and licensed, shall be subject to be libeled in any of the United States court for the wages of any person who may be employed on board thereof in navigating the same."

In support of this; reference is made to the following authorities:

Amis vs. The Louisa, (9 Mo. 621;) Glien vs. The Belmont (11 Mo. 112;) Kentucky vs. Brooks, (1 Green, 398;) the Dick Keyes, (1 Bliss. 408;) and the Sidney (27 Fed. Rep. 119.)

I find in none of these cases authority that will justify me in deciding that the steamboat proceeded against is subject to lien for the wages of the libelant, earned by services rendered on board the canal boats, in pursuance of an employment to work on such boats. And no principle it seems to me that such a decision cannot be made. The canal boats which when on the canal were towed by the Ida Meyer were not appurtenant to the steamboat in any just sense. The steamboat was rather appurtenant to the canal boats; and it seems to me easier to say that the canal boats were navigated by the hands of the steamboat, than to say that the hands of the canal boat navigated the steamboat.

The libel is dismissed with costs.

May 19, 1887.

CHARTER PARTY—TIME OF SAILING OF VESSEL—"ABOUT THE MIDDLE OF SEPTEMBER—"—SEPTEMBER 29th—PREVIOUS NOTICE TO CHARTERER—FAILURE TO OBJECT—SUBSEQUENT OBJECTION.

Defendant chartered the steamer Notting Hill to carry cattle; the charter read "sailing from New York about the middle of September." The vessel was delayed in getting to New York. On September 14th, defendant inquired as to steamer's probable sailing day, and was told about September 27th, to which he made no objection. The vessel thereafter arriving, and defendant being notified that she would sail on the 29th, declining to ship his cattle, on the ground that the charter did not require him to ship at so late a day. Held, that after the notice to defendant, given before the middle of the month, as to the steamer's probable sailing day, and his acquiescence therein, it was not open to him to say that September 29th was not in compliance with the contract. Held, therefore that defendant's refusal to ship cattle was a breach of the charter.

Benedict, J.

This action is brought by the owners of the steamer Notting Hill to recover damages of the defendant for an alleged breach of a live stock freight contract, made by the defendant, whereby he agreed to ship on the said steamer about 460 head of cattle to be transported in said vessel from New York to Deptford, at a price named.

The contract was in writting and was made in New York on the eleventh of August 1883 at which time the steamer was upon a voyage from New York to London and back.

The contract when designating the steamer in which the cattle were to be transported adds to the steamer's name the words, "Sailing from New York about middle of September."

The steamer was unable to get back to New York before September 22nd. On September 22d the defendant was notified that the steamer would be ready to sail on the 29th, but declined to ship cattle by her, upon the ground that his contract did not require him to ship at so late a day.

I should have been inclined to support the defendant in this refusal, were it not for the additional fact that on the 14th day of September, in answer to the defendants inquiry as to the date on which the steamer left London, and also "her probable date of sailing from New York," was informed by telegraph that she had sailed from London on the 6th of September, and would be dispatched from New York about September 27th, and he then made no objection of any kind to shipping his cattle on her.

The praise in the contract, "about the the middle of September," is indefinite. It has no definite meaning in the trade. In this instance it was construed by the ship to cover a day as late as September 27th. This construction was made known to the defendant on September 14th, and he then made no objection to that construction. After this interpretation of the indefinite phrase "about the middle of September," acquiesced in by the defendant, and that too on the day before the middle of September, it was not open to the defendant to say that a tender of the ship on the 26th of September was not a compliance with the contract. The defendant's refusal to ship cattle on the steamship was therefore a breach of the contract on his part, and he is liable for the damages resulting therefrom.

May 27, 1887.

THE LOCKS.

In the early history of the navigation of the lakes, the rapids of the St. Mary's river formed an unsurmountable barrier between Lake Superior and all waters below. No vessel larger than an Indian canoe could make its way up them and few white men would dare to risk even a "shoot" down them. Before the canal was built, the only vessels that had ever plowed the great "Gitchee Gaume" had been taken around the rapids, a distance of over a mile, on rollers, while the cargoes were hauled around by teams and reloaded above. The need of a canal was apparent, but in that early day, few of the most hopeful of the believers in the future greatness of the upper peninsula more than dreamed of its ever being an accomplished fact. Iron was then an undiscovered product of the state and the Lake Superior region a vast wilderness, inhabited solely by Indians and trappers. It was the discovery of the ores which made the building of the canal possible.

In his first message to the legislature in 1837, Gov. Mason recommended that steps be taken for building a canal around the falls of St. Mary's river. The recommendation was favorably considered, and in 1838 an appropriation for that purpose was made by the Michigan legislature; but when work was sought to be commenced thereon a year and a half later, the troops at Fort Brady interfered and put a stop to the project upon the plea that the state was trespassing upon the government's rights.

The canal project was thus blocked and it was not until 1852, nearly twelve years later, that any further action was taken. The growing needs of the canal had by this time became apparent, though congress did not consider it of very great importance. A donation of 750,000 acres of land was made to the state provided she would construct and maintain a ship canal at this point. The donation was but a small one, considering the magnitude of the project; but in 1853 the state accepted the trust and work was begun in February of that year. With a vigor and enterprise most commendable, the work was so rapidly pushed that the million dollar canal with its 11½ feet of water and two locks was completed and in operation on the 21st day of May, 1855, a few months more than two years after its commencement. The United States government might well take pattern from this vigorous method of rushing public improvements to completion.

These locks were built of Ohio limestone, and were double. They stand just north of the present lock, and are a monument of the engineering skill of that early day. They are 700 feet long by 70 feet wide, and have a depth of 12 feet, far too shallow for the heavy draught steamers of the present time. The state kept these locks in repair and charged toll on vessels which were locked through; but when eighteen years had elapsed and the commerce had increased in an enormous rate, it became more and more apparent that it was a national enterprise, and should be taken charge of by the general government. The state, therefore, in 1872, proposed to cede the canal and appurtenances to the United States provided they would enlarge it and make it free to United States vessels. This the general government agreed to and accepted the concession, beginning work on a new canal and lock, 125 feet south of the state locks, on June 19, 1873. With the dilatoriness which has ever characterized works undertaken under government control it was not completed until September 1, 1881, or more than eight years after the work was begun. It is, however, a magnificent piece of engineering; is said to be the largest canal lock in the world and will outlast the century.

Cold figures give little idea of its mammoth proportions, real stability, or magnificent beauty and strength. Between the inner gates its length is 515 feet (nearly one-tenth of a mile), while its breadth is 80 feet in the body of the lock and 60 feet at the gates. Its walls, built of huge blocks of Kelley's Island limestone, firmly cemented together with imported hydraulic cement, are 30 feet thick at the base and 15 at the top; are 39½ feet high, while the greatest depth of water is not less than 16 feet, though sometimes it is several inches less in the canal above. The power used in opening and closing the gates, letting the water in and out, drawing in vessels, generating electricity for lighting up the canal, locks, and park near by, is all hydraulic and is obtained by a stream of water taken through a 36-inch pipe from above, laid along the south wall, giving a fall of 18 feet on a powerful turbine wheel in the engine house at the east or lower end of south wall of the canal.

On the whole it is a piece of engineering and mechanical skill, the immensity of which must be seen to be realized. It is the Queen lock of its kind and has been visited by scores of prominent engineers from all parts of the world. Among them only a few years ago, was the engineer of the Russian government who was on a tour of inspection throughout the United States, and had visited the greatest public works of the world. He spent much time in making a detailed examination of the lock here and pronounced it the finest and best structure of its kind in existence. The total cost was about $2,000,000.

When this lock was completed it was supposed that it would be amply sufficient for many years service. The great ore and lumber industry of the northwest was in its infancy, however, and only a short time elapsed ere it was clearly demonstrated that her capacity would soon be reached; that in a few years she would be unable to do the work required of her—that time is already here. Every day vessels desiring to pass through are delayed here for an hour or more, and not unfrequently serious stoppages are caused by some vessel of heavy draught sticking fast in the canal above and blocking the passage. As the canal can be only 16 feet deep, this must ever be true with vessels drawing nearly that amount of water. Only last week a twelve-hours stoppage from this cause was made, and on Wednesday of this week the Horace A. Tuttle grounded and delayed a dozen vessels for several hours. What serious results might be caused by a day's delay, in this uncertain season of navigation, resulting from the breaking of a cable, by the blocking of the canal or for any other reason, no one can tell. The old locks are practically inoperative.

To avoid all delays from any causes the United States government proposes to make a second canal, and work on it has been already commenced and is being pushed forward more rapidly than ordinarily on government works. The second lock will be similar in plan to the present one but much larger and correspondingly massive and substantial. The present magnificent lock will seem a pigmy beside it. Its interior dimensions will be 800 by 100 feet, with gates the full width, or 40 feet wider than those of the present lock. Its walls will be 50 feet high, averaging 30 feet in thickness and vessels drawing 20 feet can readily pass through it, as the depth of water will be nearly 22 feet. Its estimated cost of construction is placed at $4,000,000 round numbers, and its completion may take fully seventeen years of precious time, even if congress proves its generosity and appreciation of the needs of the lake commerce by making suitable prompt appropriations.

The immensity of the traffic (a complete record of the vessels, tonnage, etc., is kept) which passes through the present lock is not even realized by the actual resident who sees the forty or fifty vessels which pass here daily. Figures can give little idea of it. During the five years previous to the present season nearly 15,000,000 tons passed through this lock. It is estimated that this freight loaded into cars would make a train nearly 5,000 miles in length, or, was it run in trains for the days navigation was open for the five months, it would make a daily train of over four miles in length. The tonnage from 1882 to 1886 has more than doubled—a most wonderful growth, indeed; but no greater proportional increase than is shown by the records of the present year.

DANGER OF THE SEA.

[Published by request.]

Cease ye borous, blustering sailor.
List ye landmen all to me;
Messmates hear a brother sailor,
Sing the danger of the sea.

Of Captain Bradford, son and daughter,
And the crew of the same;
They were sailing down Lake Huron
On the old, the rotton Fame.

The sea was heavy, breaking o'er her,
Dismal was the night to see;
Snowing heavily upon her,
As they run to make a lee.

As they were off Presque Isle Harbor,
She grounded hard upon a reef;
Darkness shut in all around them,
Surely there was no relief.

In this sea the boat was lowered,
On the lee they did embark—
In the yawl boat for the shore,
On this perilous sea so dark.

But the land was gained in safety,
And they once more safe on shore;
And the Fame has gone to pieces,
And will sail here no more.

On the night of the 27th,
News did come of wrecks below;
A crew came forth to go and rescue,
And to save if in their power.

Two from the Fame, Girrity, Lafrinier,
Crawford, Peirce and Mathison,
With horses and wagon started for them,
Driven by Captain Ludington.

Of the Moss we now will speak.
By Captain Christie in command;
Upon the rocks she lay a pounding,
On the shore, near the land.

Staunch she stood, the hard waves dashing,
Like a noble ship of life;
In the cabin the crew were staying,
With Captain Christie and his wife.

At length her timbers yielding to it,
And the water began to flow,
Filling her with water, and it
Filled her crew with sorrow too.

From her davits her boat was torn,
And was washed upon the shore,
There in their perilous situation,
They remained 20 hours or more.

Now the Acontias we will remember,
She was cast upon the shore;
To the seas her timbers yielding,
To this dreadfull watery force.

Filled with water to over flowing,
They were left in this sad state;
Ah, my landsmen, is this not suffering?
But, Ah, it is the sailor's fate.

From this perilous situation,
They were rescued at midnight;
Think of the joy that filled them,
As on the shore they saw a light.

Eight stout men that went to rescue,
Drew the boat down the shore,
Over logs and over pebbles,
About half a mile or more.

Now the Mason we'll remember,
She was in the same tow;
Cast on the outer end of the Island,
Which did prove their overthrow.

Driving her crew into the rigging,
Where they remained five hours or more,
In this deluge of the tempest,
Where the seas broke o'er them sore.

Mrs. Allen and her daughter
In the mizzen rigging lashed,
Where they endured all the hardships—
From their limbs tore bits of flesh.

They were bruised, their feet were frozen,
Sorrow and anguish around them lay,
They were rescued by McPherson,
And to a safer place conveyed.

From this perilous situation
They were rescued and preserved,
By the life saving crew and neighbors,
All from death and watery grave.

Long we all will remember
Of the night so dark and late,
The twenty-seventh of October.
They all did meet their dismal fate.

But the suffring from the Vernon
Is the last we'll take in tune,
None but those who are tried
Can tell the feelings of the doomed.

We've seen them struggling on the water,
For life is dear and sweet to all,
But there was no arm to save them,
They must go when they are called.

Thoughts of friends and dear companions
Rack their hearts, in sorrow torn,
But the life raft and preservers
Are worthless trash in such a storm.

Now all you that's lost a loved one,
Brother, son or companion true;
Go and tell it all to Jesus.
As his disciples once did do.

—Composed and sung by Philo B. Ludington, Presque Isle, Mich.

LUMBER SHIPMENTS.

The shipments of lumber, shingles, and lath by water for the season of 1887 have been compiled from the custom house records. Compared with former years there is shown to be a decline, which is mainly due to increased shipments by rail, of which there is no record. The increased rate of lake freight and a reduction of those by rail have seriously affected the custom house showing for the season just closed.

The following statement will show the port of destination and the quantity shipped to each:

LUMBER.

Tonawanda 198,457,000, Buffalo 106,756,000, Cleveland 70,467,000, Toledo 62,272,000, Sandusky 15,098,000, Detroit 7,756,000, Erie 7,353,000, Dunkirk 2,275,000, Black Rock 2,020,000, Chicago 1,975,000, Ogdensburg 1,930,000, Montreal 1,587,627, Port Clinton 1,323,000, Kingston 910,000, Black River 800,000 Mt. Clemens 745,000, Michigan City 640,000, Lorain 540,000, Fairport 463,000, Marine City 425,000, Fremont 400,000, Sackett's Harbor 300,000, Algonac 280,000, Wyandotte 195,000, Huron 170,000, Sault ste Marie 170,000, Ashtabula 160,000, St. Clair 75,000; total, 457,412,627.

SHINGLES.

Tonawanda 36,555,000, Cleveland 24,381,000, Buffalo 23,282,000, Black Rock 1,000,000, Ashtabula 650,000, Huron 500,000, Erie 400,000; total, 87,068,000.

LATH.

Cleveland 8,449,000, Toledo 5,158,000, Buffalo 4,149,000, Tonawanda 2,999,000, Detroit 850,000, Sandusky 200,000. Erie 200,000, Port Clinton 150,000, Ashtabula 600,000; total, 22,246,000.

THE board of managers of the Lake Carriers' Association meet this morning at Buffalo. They will discuss the best means of improving the present libel laws, the steering regulations, the improvement of the Cleveland breakwater, the establishment of a naval reserve or naval militia, on the general basis recommended by the secretary of the navy in his last report and such other business as may come before them.

Compared with 1886 the shipments of wheat by canal show a decrease of 1,389,953 bushels; in corn there is an increase of 2,099,898 bushels; in oats an increase of 1,729,950 bushels; in barley an increase of 438,299 bushels, and in rye an increase of 164,726 bushels. The total increase in the shipments of all grain by canal is 3,042,920 bushels.

While freights have at times ruled low both by lake and canal, the business of the season, on the whole, has been remunerative and satisfactory.

A lake captain, prominent for his corpulence and impatience, made himself heard in his neighborhood, about a single Flannel Shirt his wife purchased from one of our principal clothing stores. As soon as he attempted to make himself comfortable in this new Shirt he could hardly get into it, being too small in the body, too short, too tight in the sleeves, buttons came off, etc. Contrary to his orders, she *did not* patronize the Boston Dry Goods Store of *Kohn & Co.*, 213 Detroit st., near corner Pearl, the only Retail store in this City, where *they themselves manufacture genuine, home-made Shirts*, of *Flannel, Cassimere*, navy blue, double and single-breasted *Flannel Shirts*, 54 inches wide, 40 inches long, strongly sewed ☞ *or make them to order* ☜ if you select your own material, for 25c. each, including buttons, etc.

In connection we have ☞ *a merchant tailoring department* ☜ conducted by our son, Jos. L. Kohn, a thoroughly-trained tailor and cutter, who offers to make in first-class style, *perfect fit, best workmanship guaranteed*, fine *Dress Suits, Business Suits, Overcoats* for $10 less than any other merchant tailor, because he has no extra expenses for Rent, and does *his own cutting*, (which alone saves $25 per week,) all of which secures him a large patronage. Payments at the convenience of the customers.

☞ Leave your measure for scarlet medicated Flannel Undershirts and Drawers. ☜ Kohn & Co., 213 Detroit st., near corner of Pearl, where every West Side car passes.

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MAJOR SAMUEL M. MANSFIELD, Detroit, Mich.

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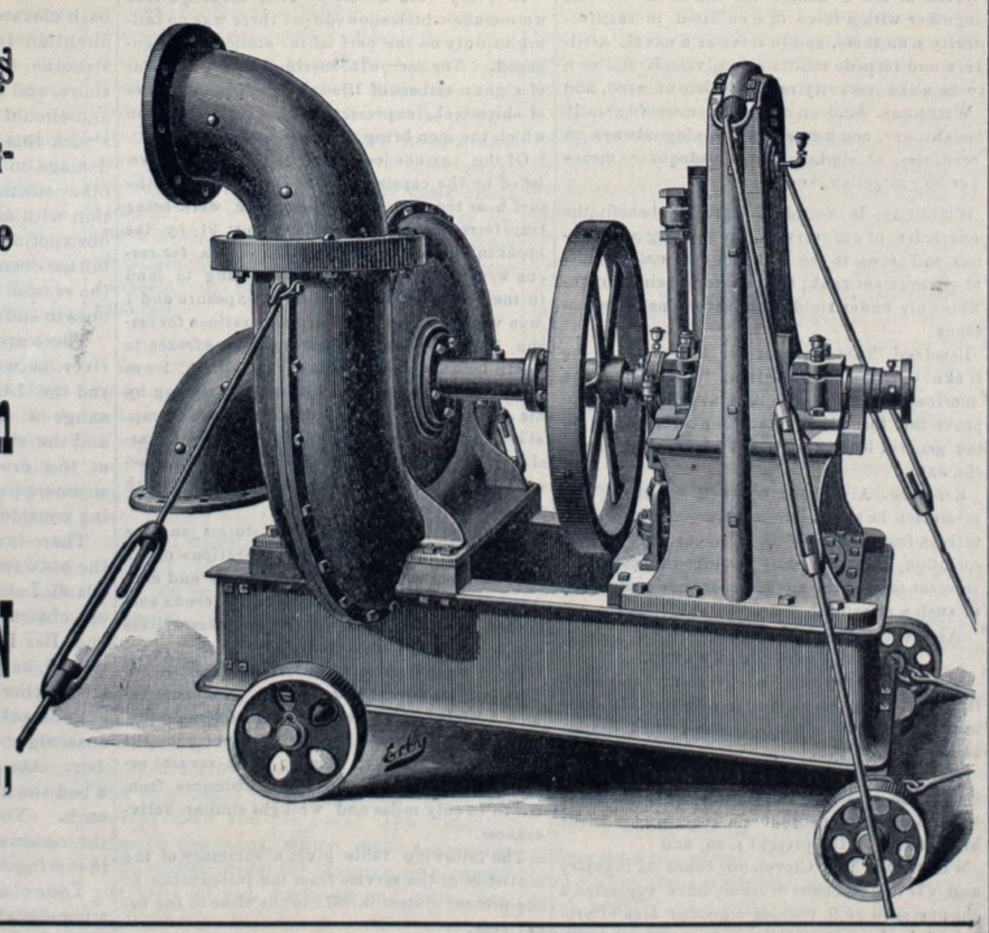

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Marine Record.

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Subscribers and others are respectfully invited to use the columns of the MARINE RECORD for the discussion of pertinent topics.

Entered at the Post Office at Cleveland as second-class mail matter.

CLEVELAND, O., THURSDAY, DEC. 29.

LAKE CARRIERS' ASSOCIATION,

TO CONSIDER AND TAKE ACTION UPON ALL GENERAL QUESTIONS RELATING TO THE NAVIGATION AND CARRYING BUSINESS OF THE GREAT LAKES AND THE WATERS TRIBUTARY THERETO; WITH THE INTENT TO IMPROVE THE CHARCTER OF THE SERVICE RENDERED TO THE PUBLIC, TO PROTECT THE COMMON INTEREST OF LAKE CARRIERS, AND PROMOTE THEIR GENERAL WELFARE.

BOARD OF MANAGERS, 1887.

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MARINE RECORD—OFFICIAL PAPER.

A NAVAL RESERVE.

The subject of naval reserve, as recommended by the secretary of the navy in his recent annual report, is one of great interest. It is generally recognized that it is not desirable for the United States, situated as it is apart from all the other great powers, to keep a large standing army or navy. It is however very important, that we should have the means for promptly furnishing large forces of trained men in time of need. This is accomplished for the army through the militia. Our regular army amounts to but 25,000 men. The militia force, of men engaged in private pursuits, but kept under government training for service when necessary, is of over 3,000,000. Secretary Whitney's idea is to give the navy the advantage of a similar service.

He would begin, as we understand it, with the vessels. There are in the merchant service many vessels fitted for naval use, not perhaps as men of war, but as cruisers, to destroy the enemy's commerce, transport troops, etc. We have several such on the great lakes. Such vessels as are available would be enrolled on the government lists as a part of the naval reserve. The owners agreeing to sell them to the government at a fixed sum in time of need, or to furnish them temporarily at a stated sum per month. For this they would receive regular yearly compensation. Supplies of artillery and ammunition sufficient for each ship would be kept constantly on hand by the government.

The men to equip them would be divided into three bodies, a naval, artillery and torpedo corps. The first would be made up from the crews of the vessels themselves, and of other merchant vessels. Masters, mates, engineers, wheelsmen, etc., would be examined by the government, and those found properly qualified would be assigned to suitable positions in the service, under commission from the president. Masters so qualified would have a private pennant which they might fly on their vessels. At some convenient season, which would be during the winter for the lake service, each man would be put under regular training, at full rates of pay according to naval rank, for two weeks or a month. Apart from the dignity attained by a position as a commissioned officer of the United States navy, the compensation thus received would be sufficient to attract many.

The artillery and torpedo corps would be reinforced mainly from the office forces of our vessel interests, and from any classes interested in maritime matters, or such as might volunteer for the service. These departments require special training, which could conveniently be given in the winter seasons.

The advantages of Secretary Whitney's plan are manifold. Adequate protection would be afforded to our lake cities and our valuable commerce, instantly available in time of need, and at moderate expense. The personel of our lake service would be benefitted in that our masters, mates and etc., would be incited to fit themselves to pass these government examinations. The lakes furnish an especially advantageous locality for a trial of the plan, inasmuch as the winter furnishes a convenient season for examination and training. It is to be hoped that the secretary's ideas will soon be put in formal shape, and introduced in congress. They have already met with wide spread notice and hearty endorsement. The Lake Carriers' association, at its meeting last Thursday, formally gave to the project the approval of the marine interest of the great lakes. The boards of trade of the principal lake cities will undoubtedly take similar action. The possible ramifications of the scheme are many, but in its general nature, and as at present made public, it is deserving of vigorous support.

BUFFALO, December 22.

At a meeting of the board of managers of the Lake Carriers' Association, held at Buffalo this date, the following resolutions were adopted:

NAVAL RESERVE.

WHEREAS. The secretary of the navy, in his last annual report, recommends the establishment of a naval reserve, by which there may be enrolled on the government lists such merchant vessels as are available for the naval service, together with a force of men fitted to satisfactorily man them, and to serve as a naval, artillery and torpedo militia corps, vessels and men to be alike instantly ready in time of need, and

WHEREAS. Such an organization would greatly benefit our commerce, by keeping always in readiness, at slight expense, adequate means for its protection, and

WHEREAS. It would also greatly benefit the character of our service, by inciting our masters and crews to the dignities and emoluments of government rank, the positions being obtainable only under rigid examinations as to competency.

Resolved. That the board of managers of the Lake Carriers' Association, representing the marine interests of the great lakes, heartily approve the formation of such naval reserves on the general basis as outlined by the secretary of the navy.

Resolved. Also, that certified copies of this resolution be sent to the senators and representatives from the districts represented by this association, and that they be urged to use their interest toward the advancement and realization of such a measure.

Also the following:

CLEVELAND BREAKWATER.

WHEREAS. Certain improvements and additions to the government breakwater at Cleveland are now being made by the United States, and

WHEREAS. The recent large increase in the size of the vessels building on the great lakes has rendered inadequate the construction of the breakwater on the present plan, and

WHEREAS. The Cleveland board of industry and Cleveland board of trade, have suggested a change such as to provide a greater area of protected harbor space for refuge purposes, with draft of water sufficient for the largest vessels.

Resolved. That the board of managers of the Lake Carriers' Association consider it very important for the marine interests of the great lakes that the refuge facilities at Cleveland should be ample, also

Resolved. That certified copies of this resolution be sent to the secretary of war, to the United States engineer in charge of the work, and to other persons interested.

Frank J. Firth, H. M. Hanna, and W. P. Henry were appointed a committee of three to confer with the national board of steam navigation, New York, with reference to improving the vessel libel laws, and securing the passage of a bill adapted to the common needs of the ocean, lakes and rivers; the committee to report back to the board for final action.

The president and secretary were instructed to write to the family of DAVID DONALDSON, expressing the regret of the board at his death, and their appreciation of his sterling qualities and many virtues.

The topic of the steering regulations for steam vessels, on which there is some difference of opinion, as evinced by the replies to the secretary from the various lake ports, was reserved for further consideration.

Adjourned.

There will be a meeting of the members of the Lake Carriers' Association in the committee rooms of the Merchants' exchange, Buffalo, on Saturday December 31st. at 11 a. m. to discuss the steering regulations for steam vessels. Vessel owners generally are invited to be present.

REPORT OF THE LIFE-SAVING SERVICE.

The following is an abstract of the annual report of Mr. S. I. Kimball, general superintendent of the Life-Saving service:

The establishment embraced at the close of the last fiscal year 215 stations, as follows: 166 on the Atlantic, 41 on the lakes, 7 on the Pacific, and 1 at the Falls of the Ohio, Louisville, Ky.

The number of disasters to documented vessels reported within the field of station operations during the year was 332. On board these vessels were 6,327 persons, of whom 622 were saved and 55 lost. The number of shipwrecked persons who received succor at stations was 737, to whom 1,891 days' relief in the aggregate was afforded. The value of the vessels involved in the disasters is established at $4.769,915, and that of their cargoes at $2,288,775 making the total of $7,075,700, of which $5,788,820 was saved, and $1,286,880 lost. The total number of vessels totally lost was 72. Besides the foregoing there were during the year 135 casulties to smaller craft, such as sail boats, row boats, &c., on which there were 274 persons, 271 of whom were saved and 3 lost. The property involved in these instances estimated at $96,830, of which $92,915 was saved, and $3,915 lost.

In addition to persons saved from vessels, there were 23 others rescued, who had fallen from wharves, piers, &c., and who would have perished without the aid of the life-saving crews.

In rendering assistance in saving vessels and cargoes more work was accomplished than in any previous year, except the one immediately proceeding, 393 vessels having been floated off when stranded, repaired when damaged, piloted out of dangerous places similarly assisted by the station crews. There were besides 210 instances where vessels running into danger of stranding were warned off by the signals of the patrols, most of them thus being probably saved from partial or total destruction.

In every case of loss of life, investigations were made which showed that there was no failure in duty on the part of the station force engaged. The sorrowful sacrifice during the year of eight members of life-saving crews at scenes of shipwreck, expresses the habitual devotion which the men bring to efforts at rescue.

Of the persons lost during the year 22 perished by the capsizing of the ship's boat and the surf boat together while the people were being transferred from one to the other; 21 by the breaking up of the vessel while efforts for rescue were in progress; 8 in attempting to land in their own boats; 1 died from exposure and 1 was washed overboard during operations for rescue, 1 was swept overboard and 2 were frozen to death before assistance could reach them; 1 was drowned while being helped into the rigging by his shipmates, and 1 was thrown from a capsized boat and drowned before help could arrive. The report gives full and specific accounts of all the circumstances connected with the loss of these persons.

An unusual number of snow storms and the prevalence of fogs made the operations of the service more than commonly difficult and dangerous, but nevertheless the station crews succeeded in saving a much greater number of lives and a larger amount of property than ever before, in some instances performing feats of unparalled enterprise and daring. On one occasion a lifeboat crew went 110 miles to a rescue, and brought ashore twenty-four persons, the crews of two wrecked vessels. On several occasions the station men went distances from ten to twenty miles and wrought similar deliverances.

The following table gives a summary of the statistics of the service from the introduction of the present system in 1871 to the close of the fiscal year:

Total number of disasters	3,852
Total value of vessels	$44,609,960
Total value of cargoes	20,939,819
Total value of property involved	65,549,779
Total value of property saved	47,330,993
Total value of property lost	18,218,787
Total number of persons involved	35,427
Total number of persons saved	34,883
Total number of lives lost	541
Total number of persons succored	6,373
Total number of days succor afforded	17,202

The loss of life as stated above includes 183 persons lost at the wrecks of the steamers Huron and Metropolis, and also 14 other persons really not chargeable to the service, for reasons given in the report, leaving the total number of lives lost during the sixteen years of the existence of the system only 347 out of over 35,000 involved.

New stations were completed and put into commission during the year at North Scituate, Mass., and at Frankfort, Pent Water, White River, Holland, South Haven and Sturgeon Bay canal on Lake Michigan. Two others, one at Cape Elizabeth, Me., and one at Cape Lookout, N. C., have been completed and will be put in commission during the coming winter. A new station at Jerry's Point, N. H., is also approaching completion.

Four old stations have been replaced by new and improved stations, and four more are under contract for building, while extensive repairs have been put upon twenty-two others on different portions of the coast.

The general superintendent recommends the establishment of stations at Wallis Sands, N. H., Plum Island, Mass., Lynn Haven Inlet, Va., Ashtabula on Lake Erie, and Marquette on Lake Superior. Measures are in progress for the improvement of the service on the Pacific, a commission of officers being now engaged upon that coast with this view.

AIDS TO NAVIGATION.

To the Vessel Owners' Association:

GENTLEMEN: Your committee, appointed to look up the matter of beacons, ranges, buoys, and fog signals connected with the northwestern lakes and rivers, and to suggest such additions and alterations as they deem necessary, beg leave to report as follows, after careful consideration of the matter:

Your committee would advise that the following obstructions be removed and that improvements be made at the places named:

That a new cut be made from the lower end of St. Clair river, connecting the same with Lake St. Clair, said cut to be located on the west side of the canal, connecting the St. Clair river with Lake St. Clair, and that the channel be dredged so that the range lights, now located on the west pier of the present cut, can be used as ranges for either cut, and that the east cut be used by vessels and steamers bound up, and the west cut be used by vessels and steamers bound down.

That a channel of sufficient width, and with eighteen feet of water be dredged from Grosse Point to the entrance to Detroit river, and said channel to be marked by range lights. There has been eighteen feet of water in the said channel until within the last few years, but there being some obstruction, our deep draft vessels and steamers have found the ground and the action of their wheels has thrown up lumps which prove detrimental to vessels. The frequency of vessels getting on the bottom has led your committee to suggest that some action be taken toward removing these obstructions.

An obstruction, directly opposite the Wabash elevator in Detroit river, requires some attention from your association. This obstruction is about 600 feet off the Canadian shore, and has caused considerable damage, and should be removed. The steamer Ohio struck this point this summer and suffered damage to the amount of $5,000. Several other steamers have struck the same obstruction with more or less damage. While this obstruction is in Canadian waters your committee deem it necessary to report on it for the reason that American vessels are the ones to suffer.

There are three obstructions in the Detroit river, between the foot of Fighting Island and the Lime-kiln Crossing, nearly in the range of the blast furnace at Wyandotte, and the church steeple, used as a land mark at the crossing. Numerous vessels and steamers have struck at these points, causing considerable damage and loss of time.

There is an obstruction to the eastward of the outward buoy off the foot of Bois Blanc island, Lake Erie, and there are also numerous obstructions between Bois Blanc island and Bar Point light which should be removed, as many vessels and steamers have struck there this season.

Peninsula Point light is the principal coast light for vessels making Escanaba harbor. About three miles off the light there is a bad shoal with only eleven feet of water on it. Your committee would recommend the removal of said light to the shoal and that a fog signal be located there.

Your committee further recommend that a fog signal be located at the light on the west side of Beaver island, Lake Michigan, and that a light and fog signal be established on Squaw island, one of the Beaver island group.

That a light be established on the White shoals at the northerly end of Lake Michigan.

That McGulpin's Point light at the Straits of Mackinaw be removed to Old Mackinaw Point, and that a fog signal be established at the Point.

That a fog signal be established at Cheboygan Point, Lake Huron, at the entrance to the Straits of Mackinaw.

Your committee desire to call your attention to the fact that numerous disasters and loss of life have occurred each fall in the vicinity of Cheboygan, Mich., which it is believed would not have occurred if there had been a fog signal at Cheboygan Point.

That a fog signal be established a Presque Isle, Lake Huron.

That government ranges be located in St. Clair river, commencing at the head of Russell island, thence to the St. Clair Flats canal where private enterprise has been keeping lights.

That range lights and stakes be placed in Lake St. Clair from Grosse Point to the entrance to Detroit river.

That range lights be located on Grosse Isle, Detroit river, to indicate the channel from the foot of Fighting island to the Lime kiln crossing and buoys, to mark the obstructions in said channel.

That a fog whistle be established at Point aux Pellee, Lake Erie.

That a lighthouse and fog signal be established at Point Abino, Ont.

That a fog whistle be established on the east end of the west arm of the breakwater at Cleveland, Ohio.

That a fog signal be established on the end of the west pier at Ashtabula Harbor, Ohio.

That a fog whistle be established at Twin River Point, Lake Michigan.

That a fog whistle be located on the breakwater at Chicago, Ill.

That another light be located on the pier at the entrance to Duluth Harbor, to form a range going in; said light to be white flash.

That a white flash light be located at the entrance to Two Harbors, Lake Superior, and that a fog whisle be established there

That a red flash light be located on Devil Island, the most northerly island of the Apostle group, Lake Superior.

That a fog signal be established at Chequamegon Point, commonly called LaPoint, entrance to Ashland Harbor, Lake Superior.

That a red and white flash light be located on Rock of Ages on the southwest end of Isle Royale, Lake Superior, and that a fog signal be established at the same place.

That a fog signal be located at each end of the Portage lake ship canal, Lake Superior.

That a fog signal be established at Eagle river, Lake Superior.

That the light on the point at Copper Harbor, Lake Superior, which has been discontinued, be relighted and maintained hereafter.

That a fog whistle be located at Point Iriquois, Lake Superior, in place of the bell located there at present.

That all buoys and stakes marking the channel through St. Mary's river, from Lake Huron to Lake Superior, be left in their positions until the canal is closed each year.

That the targets designating the channel through St. Mary's river be kept properly located and the bushes kept cut away so as not to obstruct the view of said targets.

That a light be established on Starve Island detached shoal, head of Lake Erie.

That range lights be placed on the west pier at Ashtabula Harbor, Ohio.

That a fog whistle be located on Michigan Island, Lake Superior.

That a buoy be located in Waiska Bay, Lake Superior, off Old Mission and in range of Round Island and Point Iroquois to indicate a shoal there on which there is only fourteen feet of water.

That the light at La Point, entrance to Ashland, Lake Superior, be changed from fourth order to second order and that the same be changed to red and white flash.

Your committee in connection herewith present a comparative statement for 1886 and 1887 of the business through St. Mary's river, and state that the commerce through the Straits of Mackinaw is three times and that through the Detroit and St. Clair rivers four times the commerce through St. Mary's river.

Year.	*Steamers.*	*Sail vessels.*	*Unregistered.*
1886	4,584	2,534	306
1887	5,968	2,562	825
Increase...	1,384	28	519

Year.	*Total Passages.*	*Total Dockages.*	*Tonnage. Reg'd.*	*Freight.*	*Passengers*
1886	7,424	3,593	4,219,397	4,527,759	27,080
1887	9,355	4,165	4,897,598	5,494,649	32,660
Increase,	1,931	572	678,201	966,890	5,580

Your committee recommends that no action should be taken to prevent private parties maintaining range lights until such time as the government shall establish its own lights at the places, where the same have been maintained at a voluntary expense to vessel owners of thousands of dollars annually.

Your committee in view of the incompetency of the keepers of some of our lights recommended that none but sailors be put in charge of our lighthouses fog whistles, and ranges. Such men having from experience a better appreciation of the importance and necessity of keeping the same in good condition and of properly attending to their duties and of the consequences of any neglect of duty.

That a life saving station be located at Ashtabula Harbor, Ohio, on Lake Erie.

That a life saving station be located at Marquette, Mich. In regard to this latter suggestion we would say th t the Portage lake life saving crew has been called upon on two occasions to transport the apparatus from Portage lake, a distance of one hundred and ten miles, to the wrecks of the David and Robert Wallace, in the fall of 1886 and the Bradley and Sherman in the fall of 1887. These facts show that we should have more facili ies for saving life and property at Marquette.

The committee was composed of the following named gentlemen: Captain Peter Minch, Captain W. J. Trinter, Captain Wm. Cummings, Captain John Nelson, Captain Henry Stone.

C. E. BENHAM, Secretary of Committee.

At a meeting of the Cleveland Vessel Owners' Association, held December 29, 1887 the following preamble and resolutions were unanimously adopted:

WHEREAS, The senate bill, introduced at the last session, by the Honorable Senator Whitthorne, of Tennessee, provided for the establishment of a Naval Reserve on the Lakes, and the same was reported on and recommended by the secretary of the navy: and,

WHEREAS, Such proposed organization, includes the enrollment on government lists of merchant vessels available for the naval service, and the formation of a militia force, educated and trained for instant and effective service; and,

WHEREAS, The vast interests, as well of the lake marine as of lake cities, would find a measure of relief and security in the promptness with which an intelligent, organized force could be called into service at any point of danger in time of need; and

WHEREAS, The effect of such an organization upon the officers and men composing our lake merchant marine would necessarily be beneficial, tending to elevate the standards of qualifications in their calling:

Resolved, That the Cleveland Vessel Owners' Association, comprising the vessel owners of Cleveland and vicinity, heartily approves the establishment of such Naval Reserve, and regards the proposition as wise, timely and important.

Resolved, That copies of these resolutions be sent to our senators and representatives in congress, with the request that they use their influence in favor of the necessary legislation.

The committee appointed to act in the matter of employing an attorney to go to Washington and look after the interests of the lakes consist of the following named gentlemen: H. M. Hanna, H. P. Lilliebridge, J. C. Gilchrist.

LAKE COMMERCE.

I have just finished a journey which begun last June, and which I undertook for two purposes: First, to enable me to mentally grasp the magnitude of the lake commerce, the methods employed in conducting it, and to judge of its probable future; second, to look into the speculative real estate excitement which raged in the west a few months ago, and to try to determine where the future great city would be built in the west. The journey, which covered many thousand miles, included a trip from Buffalo to Duluth in a freight steamer. I examined the Tower iron mines of the Vermillion range and the iron ore deposits of the Gogebic range, the developed and undeveloped wheat fields of Northwestern Minnesota, Manitoba, Morthern Dakota, and Montana, and the mines lying in the Rocky Mountain system. I rounded out the trip by looking at the country which is tributary to Kansas City.

A BUFFALO MAN'S PROPHECY.

When I arrived in Buffalo on my return from the northwest I stopped off to talk with an old and highly intelligent gentlemen of whom I am very fond. He listened attentively to my description of the enormous magnitude of the internal commerce which is conducted on the lakes and to my estimate of its future growth and importance. When I ceased to talk he was silent and thoughtful for a few moments, apparently looking through keen, black eyes far back to his childhood days. Finally he said: "Your ideas relative to the enormous magnitude of the commerce that will be conducted on these lakes are correct. I have seen it grow from nothing, to its present size. I have lived on the shores of these lakes," indicating the four large areas of deep water which lie west of Lake Ontario with a sweep of his right arm, "I was a child, and I know that this commerce is still in its infancy."

He was silent for an instant; then he said, as his eyes turned backward in reminiscence: "When I was a child of six or eight years my father lived on a farm, which abutted on Lake Erie. To the east and across a small bay was a wooded point. Northwest of our farm was an unbroken forest. The town of Erie was a long distance west of where my father lived. One morning I got up before any one else in the house was astir. After I dressed I left the house and strolled along the lake shore. It was the grey of the morning. After I had walked, quite a long distance up the shore and toward the dark forest I heard the sound produced by oars working in their locks. I looked eastward across the calm water and saw a fleet of long, low boats which were being towed around the wooded point. They were heavily laden with men. As I looked at the unwonted spectacle the sun arose from behind the forest, and I distinctly remember to have seen the oars flashing as silver bars in the bright light. The boats headed for the forest, which was a short distance from where I stood. Presently their bows grated on the sand, and the men disembarked. There were were 300 or 400 of them. They built fires and cooked breakfast, then clambered into their boats and rowed up the bay and disappeared around another point. I had seen the fighting men and sailors who, soon afterward, when commanded by the immortal Perry, whipped the English, rowing from Buffalo to Erie, where their war ships had been built during the previous winter. So scarce were vessels on these lakes in those days that these marine warriors had to row themselves to their war ships, and I saw them rowing on that morning so long ago. That was the first commerce, if commerce it can be called, that I remember of seeing on the lakes. At any rate," he continued, "it can properly be called the commencement of the lake commerce, because the men I saw that morning ing wrested the lakes from the clutch of the British and virtually made them an American sea. And, Frank," he said earnestly as his hand fell lightly on my shoulder, "if you live to be as old as I am you will see the commerce of these lakes far surpass that of the Mediterranean sea in tonnage and in importance." He ceased to talk, but he had, I think, accurately forecasted the future growth of this commerce.

HISTORY OF LAKE COMMERCE.

To go back 70 years and that length of time is within the memory of many living men—then the land which lies around the four most westerly lakes was almost uninhabited, and large portions of it were only partially explored. Lake Superior, which is destined to be one of the most important commercial highways on earth, was then virtually unknown water surrounded by unexplored land. It was separated from the lower lakes by a short but rapid stream of white foaming water, down which no craft excepting birch bark canoes guided by Indians or by employes of the Hudson's Bay Co. had descended. And it matters not how light the craft nor how skillful the crew, none had ever ascended the Sault ste Marie's Rapids. This rapid, where the water foamed and rolled in billows over sharp rocks, cut off the upper lake from the lower ones as effectually as a mountain range would have done. It is true that men, bold and venturesome, passed beyond the wild waters that barred the way to the cold, dark water of the upper lake and built tiny boats in which to explore the unknown and rugged shores of the great lake. It is also true that the officers and employes of the Hudson Bay Company had explored the land lying adjacent to Lake Superior, but they kept their knowledge a profound secret.

Thick forests covered the rugged northern land, and concealed not only its mineral wealth, but the Chippeway Indians, who had no love for white men who were not employed by the great fur gathering company which dominated the northwest. These explorers discovered the copper mines of northern Michigan. They scoured the shores of the inland sea. They found the iron mines of Marquette. They ascended the St. Louis river to the point where the water rushes in brown foam through canons in solid granite, then they quit exploring. They knew nothing of the land which lies beyond the inhospitable shores of the lake. Westward were miles, and scores of miles, of tamarack swamps and quaking bogs and ridges of granite and boulders. It was the home of the beaver and the caribou. These explorers did not know that beyond these repulsive lands were tens of millions of acres of the most productive wheat lands on earth—and they did not care. They were prospecting for minerals and for fishing ground, and for beaver dams at which to trap.

IT IS THE COMMERCE OF A NATION.

The commerce of the lakes? It is already the commerce of a nation. The life of the lake traffic is the up cargo, and this generally consists of coal. The coals cut up by the brawny Welsh and Irish miners, who work in the deep and fiery anthracite mines of Pennsylvania, are carried to Buffalo. From that city they are shipped to the distributing points in the west. Soft coals from Pennsylvania are also shipped from Buffalo to the west. Ohio coal is shipped from Cleveland and Toledo. Wherever coal is shipped, there cargoes of grain and iron ore are discharged.

As I said, the up cargo is the life of the trade, and no eastern city, excepting export cities, of course, will be benefited by the growth of this internal commerce unless it can command the up cargo. The claim made by the Canadians that they will handle the wheat which will be raised for export in the northwest is worthy of that rather thick-headed people. They have spent about $40,000,000 in digging canals to accommodate this traffic, and still it resolutely refuses to go down the St. Lawrence river. They can fling $50,000,000 or $250,000,000 additional, if they can borrow so large a sum from credulous Englishmen, into their canal and river improvements, and they can not divert one bushel of grain from Buffalo, the Erie canal and New York. Canada does not produce the up cargo that the trade demands. Montreal merchants sell imported goods almost exclusively, and these stuffs are not called for on the wind-swept plains where the No. 1 hard wheat grows, neither do the men who work in the lumber camps and at the mines call vociferously for imported goods. They all call for coal and more coal, and still more coal, and they never receive a sufficient amount to carry them through the winter, though they call for coal almost continually.

THE LAKE CRAFT.

The lake traffic is conducted diffe.ently from any other system of transportation on water. The men who engaged in it were forced to compete with skillfully managed railroads for freight, and in addition they had but seven months per year in which to carry on their business and earn a profit on their investments. To earn money in the business the managers of the lake transportation lines had to be wise and bold and economical. The methods employed to conduct this traffic were constantly improved, until at present they are considered to be almost perfect. But with every improvement made the cost of the vessels increased enormously, until now a steamer and three consorts represent a large fortune. An iron or steel steamer, strong and seaworthy, and with great towing power, to carry 75,000 bushels of wheat and tow three consorts, costs about $175,000. A wooden screw steamer (all steamers engaged in the business are screw steamers) of the same carrying capacity and towing power costs about $125,000. A wooden schooner to carry 75,000 bushels of wheat, or 2,150 tons, costs about $75,000. A steel steamer and three consorts, as now built, represent about $400,000.

SAILORS CARELESS OF THEIR LIVES.

The spectacle of a large propeller followed by four consorts, all heavily laden, and with sails set, moving down the lakes at the rate of eight or ten miles an hour, is pleasing to anti-monopolists. The five ships carry the wheat that grew on 22,000 acres of productive Dakota wheat land. In their holds is sufficient wheat to load twenty-four freight trains of thirty cars each, and each car to carry 500 bushels. It is the cheapest transportation known to man. Wheat can be carried from Duluth to Buffalo, a distance of 880 miles, for 3 cents per bushel, and that low rate is profitable, provided an up cargo can be secured.

Annually the fleet engaged in the lake commerce grows more and more efficient. The new boats are larger and more seaworthy than the old ones. The losses of ships on the lakes, which make a long list as published when the season closes, consist generally of old, worn-out and rotten vessels that were sent to sea to earn a few dollars—and to scalp some marine insurance company. I saw several of these deadly marine outfits on Lake Superior. A small and wheezy propeller towed three or four old, half-rotten schooners. They were hardly fit to sail on a mill-pond. They were actually death traps. One afternoon the mate stood by my side when we passed one of these outfits. He pointed toward them with horny index finger.

"Look," he said, "look at that propeller and her tow. They will sink if they encounter a storm. They are unseaworthy. Those vessels were sent to sea to be lost, and they will be wrecked before the season is over. And when they sink or are smashed to bits on a rocky shore a score of brave, hardy sailors will have to battle for their lives, and some of them will be lost."

"Mate, I asked, "how are sailors induced to ship on such rotten tubs? Will the lake sailors ship on vessels which they know to be unseaworthy?"

"Will they!" he repeated, derisively. "Will they! Well, I should say they would. These lake sailors will ship on anything that floats. As long as there is a plank to stand on they will sail the plank. They are so careless of their lives, and so inherently reckless that they will ship to sail a log from New York to the North Pole. Every year we lose about five hundred sailors on these lakes, and nine-tenths of them are lost in trying to sail just such rotten old tubs as those." Here he again pointed to the asthmatical propeller and her consorts.

The sailors who man the vessels which engage in the lake commerce are among the best in the world. They are brave, reckless men. They sail their vessels until the lakes are ice-bound. Storms have no terrors for them. When freights are high and the business profitable the crews of these ships are willing to sail as long as their officers dare keep the engines going and the sails set. A large portion of these men live on farms during the winter. They own a few acres of land, and their children tend their fields during the summer, while they sail ships up and down the lakes.

There is a fascination about life on the in land water that attracts families of men. If an American begins to follow the water of the lakes his sons are sure to ship as sailors, and their sons after them. The school of the lakes is the best school to produce effective sailors that I know of. Salt-water sailors tuan up their sunburned noses at fresh-water lubbers, as they call them. I know both classes, and I unhesitatingly say that the lake sailors are vastly superior to those who sail in ships which ply between Liverpool and New York—and they are the best of the salt water sailors. The lake sailors are self-reliant, skillful, and ambitious. Their duty is to care for and sail the vessels, and they resolutely refuse to handle the cargo or to trim the ships. They are well fed and well paid.

To illustrate the skill and pluck of these men I cite the case of the steamer Spokane, on which I went up the lakes. This steel propeller opened the passage through the ice which covered Lake Superior last spring, and in doing it smashed a hole in her bow. Not a man on the steamer flinched in the presence of the imminent danger. Not one lost his head. A plank was hung over the bow of the ship close to the heaving water, and, standing on that narrow platform, to fall off of which was certain death, men worked canvas, the lower end heavily weighted, into the water opposite the gap in the steel plates. The inflowing water caught the canvas and sucked it into the hole, checking the inflow of water. Into the hold the crew followed their captain, and there in comparative darkness, and with jets of ice-water squirting on them, they patiently built up a wall of timber against the leak and reduced the amount of leakage to a point where the steam pumps could keep it down. The ship steamed into the harbor of Duluth and discharged her cargo. Freights were high. The captain squinted at the hole in his vessel's bow two or three times and then concluded that he could sail her to Buffalo. He had his ship loaded with wheat. He safely navigated her to Buffalo and earned his employers $5,000. If this captain, whose name is Jones, had been in command of the Oregon when she was damaged that vessel would still be on the high seas instead of lying on the bottom of the ocean.

SHORT-LIVED LONGSHOREMEN.

Men are the cheapest animals on earth, and their lives are squandered in conducting the lake commerce as in battle—indeed, competition is warfare, and men die in labor's ranks as they do on battlefields where bullets thickly swarm. The longshoremen who toil in the lake traffic, work hard and drink heavily. I saw the men who work on the coal docks at Buffalo and Toledo, and ore docks at Cleveland. Almost without exception they were broad-shouldered, thin-necked Irishmen. At Buffalo my steamer drew up to the iron dock just as another steamer moved away.

"How many tons of rails do you want, captain?" the foreman of the longshoremen asked.

"Five hundred and a hundred tons of spikes and fishplates," the cap ain replied

"We have just finished loading 2,000 tons in that steamer," nodding his head to indicate the departing vessel, "and the men are tired. It is supper time, captain," he added, "and you will have to wait until the men eat and rest a little while; then we will load you."

The sturdy Irishmen had been working continuously for twenty hours. Their flannel shirts were wringing wet with the sweat of toil. They were almost exhausted. They walked slowly to their boarding house, stopping on the way at a saloon to get a drink of whiskey. At 8 o'clock they returned and began to run steel rails that weighed 540 pounds each into the hold of the ship. There were thousands of tons of rails piled on the dock. Two men laid a rail on a heavy hand truck, and one man wheeled it up an incline into the ship. All the men were bare-headed. All were clad in flannel. The work was exceedingly heavy, and the truckmen strained painfully every time they wheeled their heavily laden trucks up the incline. I sat on the rail of the ship watching the work and admiring the muscular development of the men who labored below me. Take them all in all they were the most powerful men I had ever seen. Presently it became dark. A cold wind blew off the lake and over the wharf. Fires to give light to work by were built on the dock. The labor was performed silently, except for the clanging of the steel bars and the loud rattling of the trucks. After two hours passed in this excessively hard work I saw the overstrained muscles of the Irish truckmen twitch and jerk under their white skins as though turbulent creeks flowed there. They were almost exhausted. But not a man flinched from his work. The foreman sent for a bucket of beer. When it was brought the tired men drank deeply. Sweat, laden with iron dust, rolled down their bodies in tiny rills.

The beer did not seem to meet the imperions demands their systems made for stimulants. Presently a broad-shouldered, bullet-headed, black-eyed truckman slammed his truck down on the dock and said loudly: "Curse the beer. There is no strength in it at all." Then turning to the foreman he said: 'Get a pailful of whiskey, or we will never get this iron loaded." A pailful of raw whiskey was brought onto the dock. Man after man raised the bucket to his lips and drank freely of the fiery spirits. Then they worked with renewed energy. I noticed that their muscles ceased to twitch. They worked rapidly, and though they drank high-proof spirits at short intervals, the only apparent effect it had on them was to cause their naturally fiery tempers to blaze a little higher. Occasionally men dropped the handles of their trucks preparatory to fighting, but their foreman had them well in hand and controlled them with a few sharp-spoken words of command, on hearing which they grasped the handles of their trucks and resumed work, with many surly shakes of the head.

The mate of the vessel saw that I was interested in the work, and that I admired the physical perfection of the longshoremen. He sat silently by my side for a short time looking at the busy scene. Finally he said: "I have seen hunreds, yes thousands of these men buried. That gang," pointing to the busy workers over whom flickering bars of light played, "is a prime gang. They are powerful young men. Not one of them will be on this dock five years from to-night. The work is too hard for them to do and live. These men work by the ton. They earn from $4 to $7 per day. Night work is double pay usually. Instead of quitting werk when they are tired, they stimulate with whiskey. I have known them to work for 36 hours continuously, and eight hours of that heavy labor is sufficient to kill the devil. These men," he continued, "will finish loading the steel at about one o'clock to-night. After they quit work every one of them will drink half a pint of raw whisky before going to his boarding house. They will fling themselves on their beds, clad in their wet clothing, and let the heat of their bodies dry them while they lie in drunken slumber. At thirty-five years, if one by chance lives to be so old, the longshoreman is a broken down old man. They consume themselves with hard work and hard liquor. Americans never do this work, and it is not a job that beer-and-cabbage stuffed Dutchmen hanker after. Yes," he said carelessly, as he looked the gang over again, "they are powerful men, but they will all be dead in five years." He clambered down from the rail and walked to his quarters, whistling gayly.—*New York Times.*

FOR SALE.

PROPELLER TOLEDO—About 700 tons capacity. Apply to EBER WARD, 51 Griswold Street, Detroit, Mich.

NEW PROVIDENCE WINDLASSES.

The fact that all machines go down in front of the Providence windlass does not add anything to the value of that machine, but it serves to prove that there is no windlass in the market that can enter into competition with it, and we take this occasion to advise all owners and masters to insist on having the best machine that can be turned out. The Providence windlass is recognized as standard by all builders of ships and they know that when once placed on shipboard no trouble is experienced from them. It would, therefore, seem practical if everyone who contemplates fitting out a ship would order a windlass of the Providence pattern upon which they can depend in time of danger. We append the following list of orders:

Steamer City of Atlanta, New York, a pair of 6 by 8 inch engines for driving old windlass.

Steamers H. S. Bentley and Wm. M. Hoag, Oregon Pacific R. R. Co., each a Providence steam capstan.

Steam yacht Talisman, a Providence steam pump brake yacht windlass to replace a hand windlass of this company's manufacture.

Steamers Nos 79, 84, 86, and 87, building by Detroit Drydock Co., each a Providence steam capstan windlass and steam capstan.

Steamer No. 89, building by same Co., a Providence capstan windlass.

Schooner, building by John McDonald, Bath, Me., a Providence capstan windlass.

Steamer, building for Savannah line, by John Roach Sons, a Providence steam capstan windlass and steam capstan to go aft.

Steamer Puritan, building by John Roach Sons, two Providence steam capstans.

Three barges building for Thames Towboat Co., New London, Conn., each a Providence pump brake windlass.

Steamer building by John Oades, Detroit, a Providence capstan windlass.

Steamer building by Simon Langell for St. Clair Steamship Co., a Providence steam capstan windlass.

Steamer building by R. Mills & Co., Buffalo, a Providence steam capstan windlass and steam capstan to replace a Manton steam windlass and steam capstan which were countermanded owing to objections of owners.

They have also orders for the Herman Winter patent wharf drop gearing, as follows:

Central wharf, Boston, one drop (1.)
Long wharf, Boston, two drops (2.)
Lewis wharf, Boston, three drops (3.)
Pier 37, N. R. Morgan line, New York, twelve drops (12)

A dispatch from Sand Beach says: The Grummond wrecking expedition came into harbor at 4 p. m. After getting eight pumps on board the Osceola and at work they were unable to lower the water in her perceptibly. Divers say that her whole bottom is stove in and that it will be impossible to save the boat. The tugs Swain and Champion leave for Detroit with the expedition.

CONGRESSMAN Whiting, of Port Huron, proposes to introduce a bill to compel all masters of vessels and employees of railroads to be residents as well as citizens of the United States. He says that most of the large vessel men are now hiring Canadians who have taken out their first papers but have gone back to Canada to reside.

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Famous "Belle of Bourbon"

IS DEATH TO

ALARIA; CHILLS AND FEVER,
TYPHOID FEVER, INDIGESTION
DYSPEPSIA, SURGICAL FEVER.
BLOOD POISONING. CONSUMPTION
SLEEPLESSNESS OR INSOMNIA
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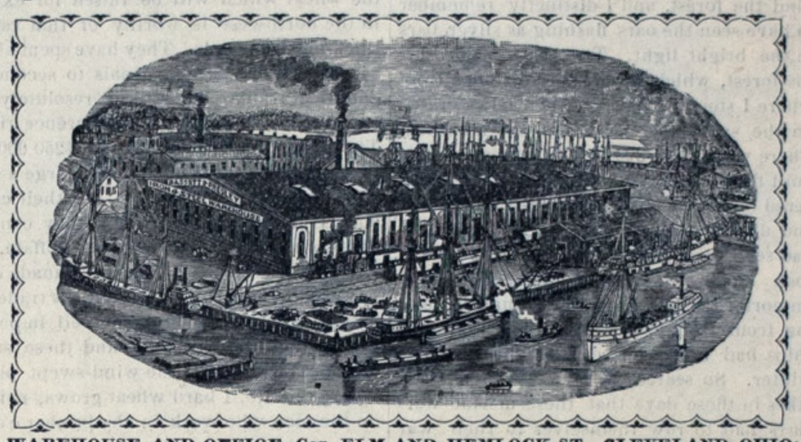

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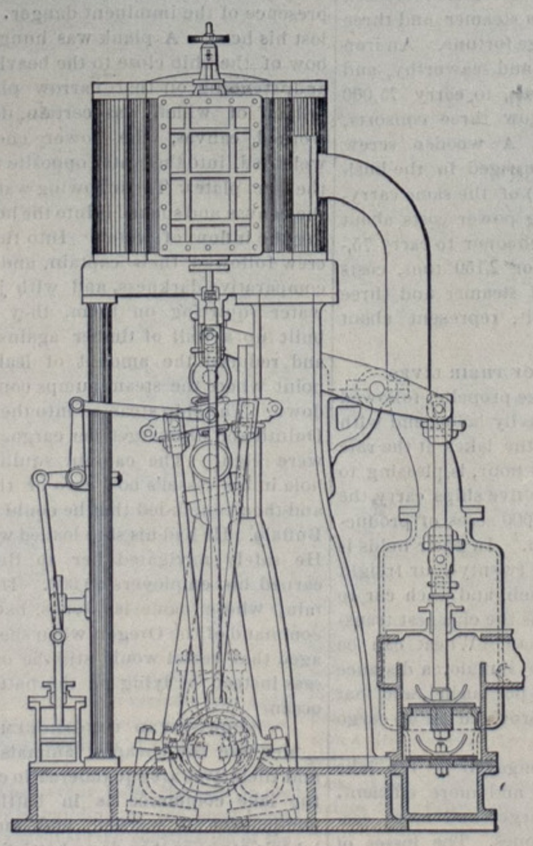

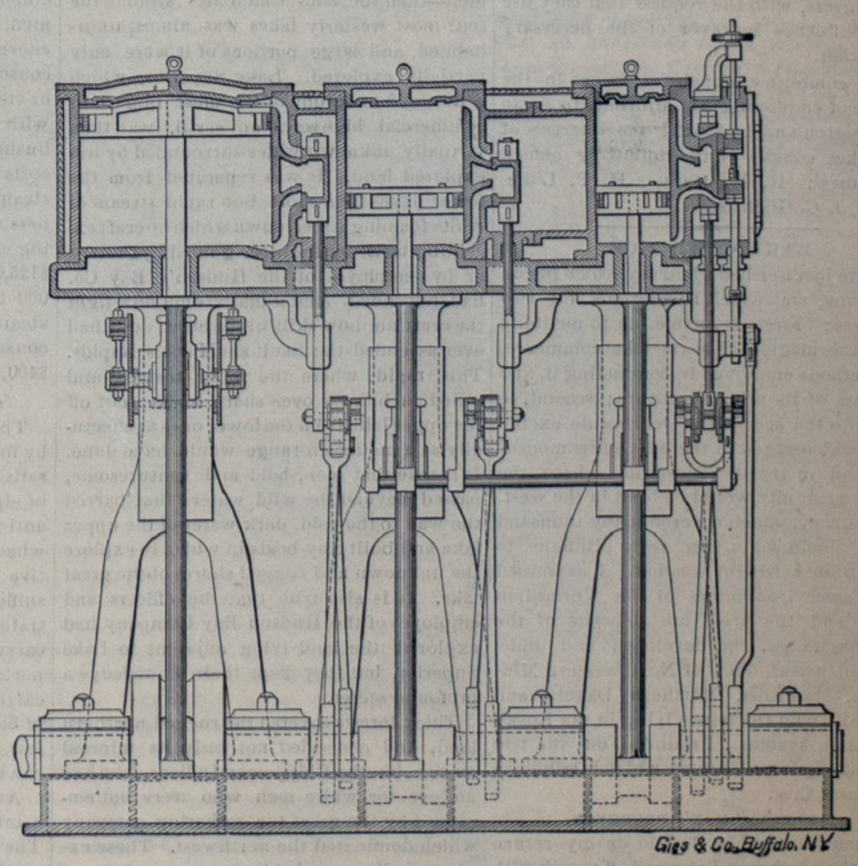

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Eastward.	Arrive	Depart.
No 4, Fast Limited Express	*2 55 A M	*2 55 A M
No 8, N. Y. B & A Express	*8 30 A M	*8 55 A M
No 26, Elyria Accommodation	†7 45 A M	
No 24, Buffalo Ac'm via Sandusky	†10 05 A M	†10 15 A M
No 24, Toledo Accom via Nor k	†10 05 A M	†10 15 A M
No. 10, New York & Boston, "F		*11 35 A M
No 12 N Y & B Fast Expr	*2 20 P M	2 45 P M
No 2, Night Ex via Nor	9 40 P M	†10 00 P M
No 22, Night Ex via San ky	†9 40 P M	
No 26, Conneaut Accomm dation	†4 25 P M	

Westward.	Arrive.	Depart.
No 1, Fast Limited Express	*12 15 A M	*12 15 A M
No. 23, Cleveland Express	*2 15 A M	
No 3, Chicago Express via "	*5 40 A M	5 55 A M
No 25, Mich Accom Norwalk		†5 35 A M
No 21, Toledo Ex via Norwalk	†12 50 P M	†3 20 P M
No 5, St Louis Ex via Sandusky	*10 50 A M	*10 55 A M
No 9, Chi Pac Ex via Norwalk	*6 55 P M	*7 15 P M
No 31, Elyria ac to Elyria only		†4 30 P M
No 27, Conneaut Accommodation	†8 10 A M	

Sunday train for Nottingham—Depart 8:15 a. m and 1:45 p. m.; returning, leave Nottingham at 8:50 a m, and 3:45 p. m.

Reference marks—* Daily, † daily, except Sunday, ‡ daily, except Monday.

A local Cleveland and New York sleeper, also sleeper for Boston, and dining car daily on No. 10, leaving Cleveland at 11 35 A M.; arrive Grand Central depot, New York, 7.30 a. m

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One 15x16 Marine Engine. Compound Marine Engines, Cylinders 12 and 20 by 16 stroke.

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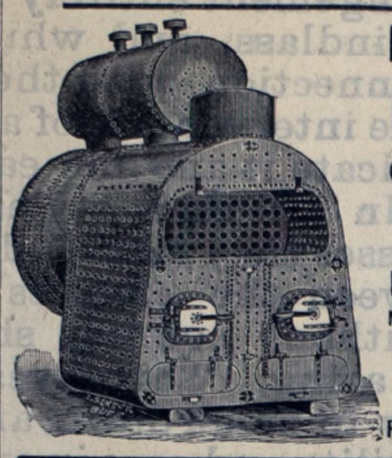

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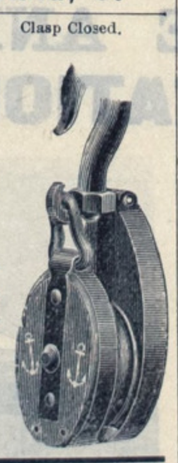

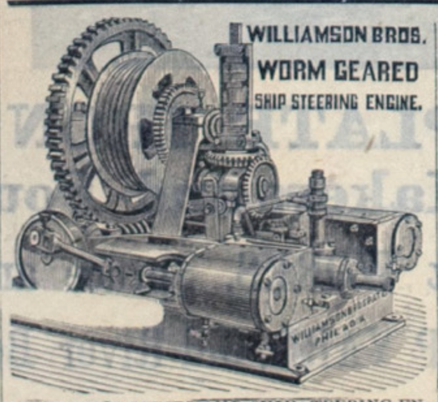

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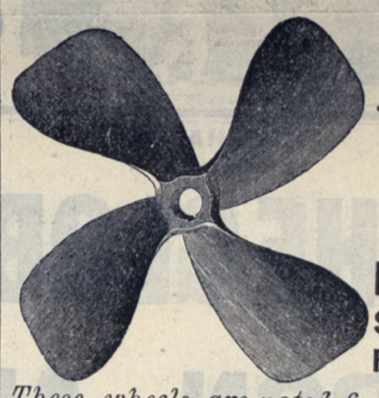

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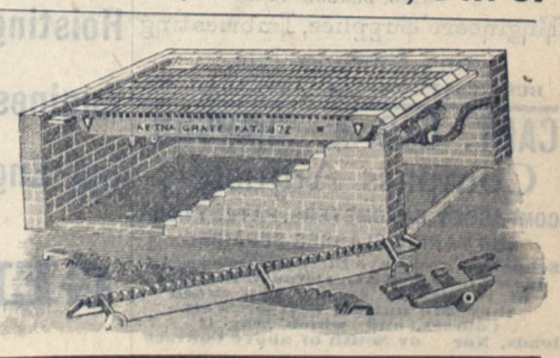

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Twelve feet long, 5 feet 3 inches diameter, thickness of plate 5/16ths of an inch, allowed 90 lbs. of steam. Nine years old.

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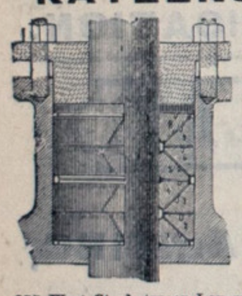

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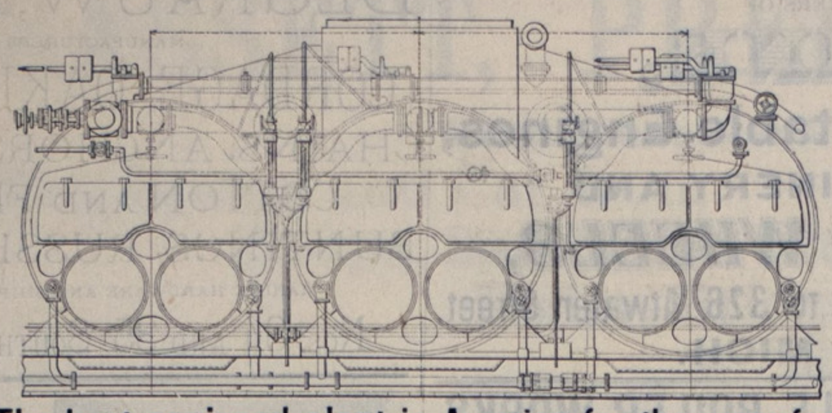

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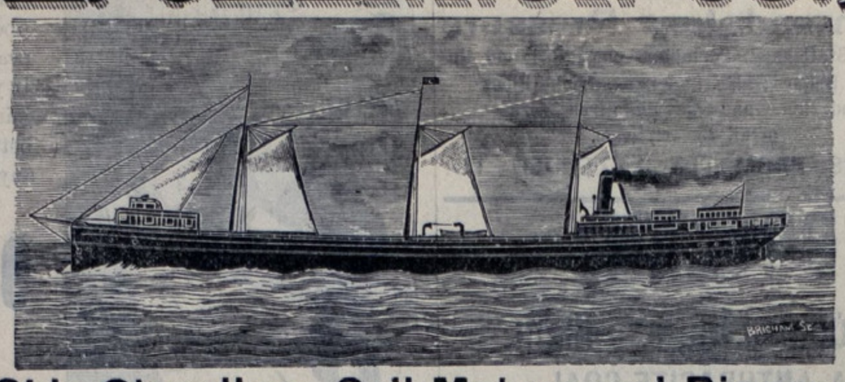

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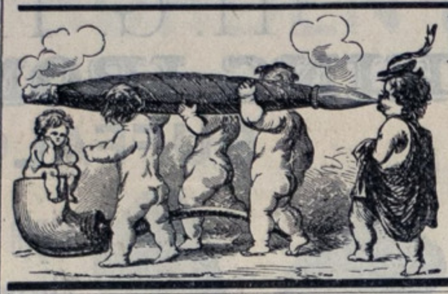

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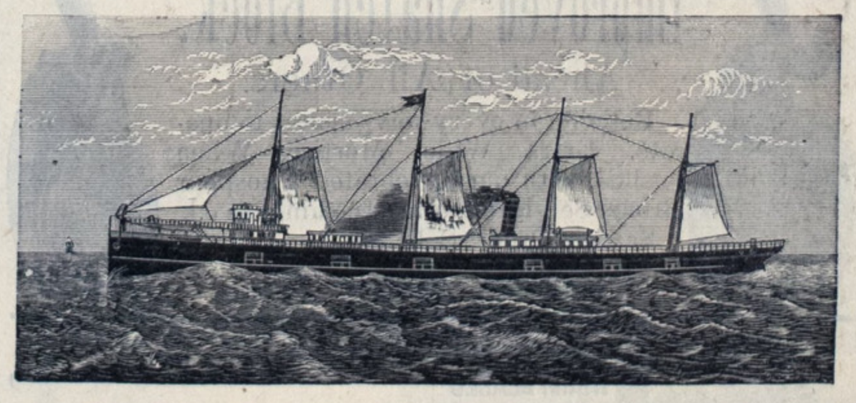

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